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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,371	11/26/2001	Robert F. Cruickshank III	24359-012	1817

22850 7590 10/06/2006

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EXAMINER	
PATEL, DHAIRYA A	
ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/995,371	CRUICKSHANK ET AL.	
	Examiner	Art Unit	
	Dhairya A. Patel	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communication filed on 7/11/2006.

2. This amendment has carefully considered and entered.

3. Claims 1-26 are cancelled. Claims 27-40 are newly added claims and are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27,29-32,34,36-38,40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grabelsky et al. U.S. Patent # 6,678,250 (hereinafter Grabelsky) in view of Kavounis et al. U.S. Patent Publication # 2002/0116213 (hereinafter Kavounis)

As per claim 27, Grabelsky teaches a system for use with a broadband network, the system comprising:

-a network-metrics apparatus configured to obtain performance metrics for at least a portion of the broadband network (column 8 lines 37-65); and

The reference teaches collecting network performance data (network metrics) at the network cluster monitoring sites (portion of broadband network) (column 8 lines 37-65).

-a data processing apparatus coupled to the network-metrics apparatus and configured to combine performance metrics obtained by the network-metrics apparatus

for lower topological levels of the network (Fig. 3 element "Level_0) into a metric of a network performance for higher topological level of the network (Fig. 4 element "Level_1"), the higher topological level comprising the lower topological levels (column 9 lines 6-37).

The reference teaches network monitor configured to monitor and collect network performance data of Level_0 (lower topological level of the network) and then network monitor in Level_1 configured to include network performance data of Level_0 in the Level_1 cluster (higher topological level), therefore making Level_1 cluster (higher topological level) comprising Level_0 cluster (lower topological level).

Grabelsky fails to teach the data-processing apparatus configured to weight contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics. Kavounis teaches data-processing apparatus configured to weight contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics (Fig. 3)(Fig. 4 element 420,430)(Paragraph 84)(Paragraph 85)(Paragraph 86)(Paragraph 87)(Paragraph 88)(Paragraph 89). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Kavounis's teaching in Grabelsky's teaching to come up with having weight contributors to performance metrics for lower topological levels into higher topological levels. The motivation for doing so would be

see the effect of the weight contributors metrics of the executive level and managerial level and operational-level would have on each other.

As per claim 29, Grabelsky and Kavouni teaches the system of claim 27, but Grabelsky further teaches further comprising:

-a data-processing apparatus configured to combine, separately, (1) performance metrics obtained by the network-metrics apparatus for lower topological levels and related to network capacity and/or traffic into a metric of network capacity and/or traffic for a higher topological level of the network (column 12 lines 3-21), and

The reference teaches combining network performance data such as packet delivery, packet loss (network capacity and/or traffic) of the Level_0 into Level_1 of the network.

(2) performance metrics obtained by the metrics apparatus for lower topological levels and related to network connectivity into a metric of network connectivity for a higher topological level of the network (column 12 lines 3-21)(column 13 liens 6-20).

The reference teaches obtaining network performance data (performance metrics) for level_0 related packet delivery, packet loss, jitter, round trip delay, receive buffer length (network connectivity) and combining with level_1 network connectivity data.

As per claim 30, Grabelsky and Kavouni teaches the system of claim 27, but Grabelsky further teaches further comprising:

-a data processing apparatus coupled to the network-metrics apparatus and configured to weight contributors to performance metrics for lower topological levels of

the network into the metric of network performance for higher topological level of the network, the contributors weighted according to their effect on the performance metrics (column 11 lines 46-50, lines 54-67)(column 12 lines 1-2)(column 9 lines 6-37).

As per claim 31, Grabelsky and Kavouni teaches the system of claim 27, but Grabelsky further teaches further comprising:

-a data processing apparatus coupled to the network-metrics apparatus and configured to weight the performance metrics for lower topological levels when combining the performance metrics for lower topological levels into the performance metric for the higher topological level, the performance metrics for lower topological levels weighted according to at least one of (1) perceived impact on network performance , and (2) perceived priority among performance metrics (column 12 lines 1-21, lines 31-45)(column 11 liens 46-50, lines 54-67).

As per claim 32, Grabelsky and Kavouni teaches the system of claim 27, but Grabelsky further teaches, further comprising:

-a data-processing apparatus coupled to the network-metrics apparatus and configured to normalize raw data related to the network performance to obtain the performance metrics for lower topological levels of the network (column 12 lines 31-45).

As per claim 34, Grabelsky teaches a system for use with a broadband network, the system comprising:

-a collector configured to collect raw data, indicative of network operation, from the network (column 8 lines 37-65);

The reference teaches collecting network performance data (network metrics) at the network cluster monitoring sites (portion of broadband network) (column 8 lines 37-65).

-first metric determining means, coupled to the collector, for receiving the raw data from the collector, manipulating the raw data to periodically determine performance metrics for lower topological layers of the network, the performance metrics for lower topological layers assigned one of a plurality of pre-determined performance levels, and being associated with a time period (column 9 lines 6-37)(column 11 lines 45-67) (column 12 lines 1-21, 31-45) ; and

The reference teaches collecting raw network performance data and manipulating raw data into jitter and packet delay performance metrics for level_0 of the network and the performance metrics are assigned to Phase 0 (predetermined levels) associated with the real time analysis (associated with a time period).

-combining means, coupled to the determining means, for combining the performance metrics for lower topological layers into performance metrics for a higher topological network layer comprising the lower topological layers, the performance metrics for the higher topological layer also associated with the time period, and indicative of the higher topological layer being at one of the pre-determined performance levels during the time period (column 9 lines 6-37)(column 11 lines 45-67)(column 12 lines 1-21, 31-45).

Grabelsky fails to teach the combining means for weighing contributors to performance metrics for lower topological levels of the network into the metric of

network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics. Kavounis teaches the combining means for weighing contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics (Fig. 3)(Fig. 4 element 420,430)(Paragraph 84)(Paragraph 85)(Paragraph 86)(Paragraph 87)(Paragraph 88)(Paragraph 89). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Kavounis's teaching in Grabelsky's teaching to come up with having weight contributors to performance metrics for lower topological levels into higher topological levels. The motivation for doing so would be see the effect of the weight contributors metrics of the executive level and managerial level and operational-level would have on each other.

As per claim 36, Grabelsky and Kavouni teaches the system of claim 34, but Grabelsky further teaches further comprising:

-the first metric determining means for determining if the raw data is a root cause or a factor in the root cause of performance degradation for lower topological layers of the network, and to weight the raw data accordingly when forming the performance metrics for lower topological layers of the network (column 12 lines 4-45)(column 13 lines 6-30).

As per claim 37, Grabelsky and Kavouni teaches the system of claim 34, but Grabelsky further teaches, further comprising:

-the first metric determining means for promoting the raw data from a factor to a root cause when the raw data is found to have a direct correlation on network performance (column 12 lines 4-38), and/or demoting the raw data to a factor from a root cause when the raw data is not found to have a direct correlation on network performance (column 12 lines 31-45).

As per claim 38, Grabelsky and Kavouni teaches the system of claim 34, but Grabelsky further teaches, further comprising:

-the first metric determining means and the combining means disposed in a node connected to at least a portion of the network (column 9 lines 37-59).

The reference teaches cluster monitor which determines metrics from the data and combines level_0 and Level_1 and level_2 metric disposed in node (Fig. 4 element 80) which is at least a portion of the network.

As per claim 40, Grabelsky teaches a method of providing quality of service to a broadband network comprising:

-collecting raw data, indicative of network operation, from the network (column 12 lines 31-43);

-receiving the collected raw data (column 12 lines 31-43);

-manipulating the raw data to periodically determine performance metrics for lower topological layers of the network, the performance metrics for lower topological layers assigned one of a plurality of pre-determined performance levels, and being associated with a time period (column 9 lines 6-49; and

-combining the performance metrics for lower topological layers into performance metrics for a higher topological network layer comprising the lower topological layers, the performance metrics for the higher topological layer also associated with the time period, and indicative of the higher topological layer being at one of the pre-determined performance levels during the time period (column 9 lines 6-49).

Grabelsky fails to teach the data-processing apparatus configured to weight contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics. Kavounis teaches data-processing apparatus configured to weight contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics (Fig. 3)(Fig. 4 element 420,430)(Paragraph 84)(Paragraph 85)(Paragraph 86)(Paragraph 87)(Paragraph 88)(Paragraph 89). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Kavounis's teaching in Grabelsky's teaching to come up with having weight contributors to performance metrics for lower topological levels into higher topological levels. The motivation for doing so would be see the effect of the weight contributors metrics of the executive level and managerial level and operational-level would have on each other.

4. Claims 27,29-32,34,36-38,40 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bearden et al. U.S. Patent Publication # 2003/0086425 (hereinafter Bearden) in view of Kavounis et al. U.S. Patent Publication # 2002/0116213 (hereinafter Kavounis)

As per claim 39, Bearden teaches a computer program product for consolidating broadband network performance and comprising computer-executable instructions for causing a computer to:

-periodically collect a cable modem hour metric for lower-level elements of a broadband network (Paragraph 89)(Paragraph 90)(Paragraph 84);

-use the cable modem hour metric to determine amounts of time that the lower-level network elements are degraded for a plurality of performance issues (Paragraph 84)(Paragraph 89)(Paragraph 90)(Paragraph 96);

-for each issue, combine the amounts of time that lower-level network elements are degraded to determine cumulative amounts of time of degraded lower-level network element performance (Paragraph 196)(Paragraph 197)(Paragraph 198)(Fig. 15)

-combine the cumulative amounts of time of degraded lower-level network element performance into cumulative amounts of time of degraded lower-level network performance for groups of related issues (Paragraph 196)(Paragraph 197)(Paragraph 198)(Fig. 15)(Fig. 19A-B)(Fig. 20A-C)

-combine the cumulative amounts of time of degraded lower-level network performance for groups of related issues into cumulative amounts of time of degraded network performance for higher level network elements, the higher-level network

elements comprising the lower-level network elements (Paragraph 196)(Paragraph 197)(Paragraph 198)(Fig. 15)(Fig. 19A-B)(Fig. 20A-C).

Bearden fails to teach weight contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics. Kavounis weight contributors to performance metrics for lower topological levels of the network into the metric of network performance for the higher topological level of the network, the contributors weighted according to their effect on the performance metrics (Fig. 3)(Fig. 4 element 420,430)(Paragraph 84)(Paragraph 85)(Paragraph 86)(Paragraph 87)(Paragraph 88)(Paragraph 89). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Kavounis's teaching in Grabelsky's teaching to come up with having weight contributors to performance metrics for lower topological levels into higher topological levels. The motivation for doing so would be see the effect of the weight contributors metrics of the executive level and managerial level and operational-level would have on each other.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 28,33,35, are rejected under 35 U.S.C. 103(a) as being unpatentable

over Grabelsky et al. U.S. Patent # 6,678,250 (hereinafter Grabelsky) in view of Kavounis et al. U.S. Patent Publication # 2002/0116213 (hereinafter Kavounis) further in view of Bearden et al. U.S. Patent Publication # 2003/0086425 (hereinafter Bearden)

As per claim 28, Grabelsky and Kavounis teaches the system of claim 27, but fails to teach further comprising: the network apparatus configured to obtain cable-modem hours metrics for at least a portion of the broadband network; and the data-processing apparatus configured to combine cable-modem hour metrics for lower topological levels of the network into a cable-modem hour metric for the higher topological level of the network. Bearden teaches the network apparatus configured to obtain cable-modem hours metrics for at least a portion of the broadband network (Paragraph 84)(Paragraph 89)(Paragraph 90); and the data-processing apparatus configured to combine cable-modem hour metrics for lower topological levels of the network into a cable-modem hour metric for the higher topological level of the network (Paragraph 196)(Paragraph 197)(Paragraph 198)(Fig. 15)(Fig. 19A-B)(Fig. 20A-C). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Bearden's teaching in Grabelsky and Kavouni's teaching to come up with combining cable modem hours metrics for lower level into higher levels of the network. The motivation for doing so would be because to find out the overall degradation in the network over a time period instead of each particular levels.

As per claim 33, Grabelsky and Kavouni teaches the system of claim 27, but fails to teach further comprising: the data-processing apparatus configured to combine

cable-modem hours for lower topological levels of the network into a level of non-degraded or degrade performance for the higher topological level of the network. Bearden teaches the data-processing apparatus configured to combine cable-modem hours for lower topological levels of the network into a level of non-degraded or degrade performance for the higher topological level of the network (Fig. 19A-B)(Fig. 20A-C)(Paragraph 233)(Paragraph 234)(Paragraph 235)(Paragraph 236). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Bearden's teaching in Grabelsky and Kavouni's teaching to come up with combining cable modem hours for lower level into higher levels of non-degraded or degraded performance. The motivation for doing so would be because to find out the overall degradation in the network over a time period instead of each particular levels.

As per claim 35, Grabelsky and Kavouni teaches the system of claim 34, but fails to teach further comprising: the first-metric determining means for manipulating the raw data to periodically determine cable modem hours for lower topological layers of the network, the cable modem hours for lower topological layers each assigned a level of degradation over time period; and the combining means for combining the cable modem hours for lower topological layers into cable modem hours for higher topological network layer, the cable modem hours for the higher topological layer assigned a level of degradation that results from combining the levels of degradation for the lower topological layers over the time period.

Bearden teaches the first-metric determining means for manipulating the raw data to periodically determine cable modem hours for lower topological layers of the

network, the cable modem hours for lower topological layers each assigned a level of degradation over time period (Paragraph 197)(Fig. 19A-B)(Fig. 20A-C); and the combining means for combining the cable modem hours for lower topological layers into cable modem hours for higher topological network layer, the cable modem hours for the higher topological layer assigned a level of degradation that results from combining the levels of degradation for the lower topological layers over the time period (Paragraph 197)(Fig. 19A-B)(Fig. 20A-C).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Bearden's teaching in Grabelsky and Kavouni's teaching to come up with combining cable modem hours for lower level into higher levels of the network. The motivation for doing so would be because to find out the overall degradation in the network over a time period instead of each particular levels.

Response to Arguments

Applicant's arguments with respect to claims 27,34,39,40 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 7/10/2006 have been fully considered but they are not persuasive.

A) As per claim 29, applicant states Grabelsky does not teach combining capacity/traffic and separately, metrics related to network connectivity.

B) As per claim 32, applicant states Grabelsky does not teach normalization of the raw data to obtain performance metrics.

C) As per claim 36, applicant states Grabelsky does not suggests determination of whether raw data is a root cause or merely a factor in performance degradation.

D) As per claim 37, applicant states Grabelsky does not suggest promoting/demoting to and from root cause.

As per remark A, Examiner respectfully disagrees with the applicant because in column 12 lines 3-21, column 13 liens 6-20, Grableksy teaches obtaining network performance data (performance metrics) for level_0 related packet delivery, packet loss, jitter, round trip delay, receive buffer length (network connectivity) and combining with level_1 network connectivity data. Grabelsky teaches combining level_0 network data with level_1 data because in column 12 lines 7-16, Grabelsky states phase 1 processing using phase 0 network performance data (combining means). Examiner would like to point out that packet deliver delay and packet loss is related to network connectively, because packet loss and packet deliver delay shows that network is working properly or is slow or is loosing packet which will tell the user that network connectivity is low/high.

As per remark B, Examiner respectfully disagrees with the applicant because in column 12 lines 31-45, Grabelsky teaches phase 2 database is an accumulation of raw network performance data from each session over a long interval which is transferred to the highest level network monitor which can track long-term network trends on high network level which means it is normalizing the raw data to see the long-term network trends. Therefore Grabelsky reads on the claimed limitations.

As per remark C, Examiner respectfully disagrees with the applicant because column 12 lines 4-45,column 13 lines 6-30, Grabelsky teaches having level of the first four parameters, round trip delay, jitter, packet loss and receiver buffer lengths which is compared to the threshold levels from the raw data because threshold levels are computed from raw data when it is normalized, and if any of the four parameter exceeds the threshold levels then there is alarm processing. Therefore if there is an alarm, it means the four parameter went over the threshold level which proves that raw data is factor of performance degradation because without the threshold level, one cannot tell how the network is behaving and the threshold level is computed from raw data normalizing.

As per remark D, Examiner respectfully disagrees with the applicant because in column 12 lines 4-45 and column 13lines 13-45, Grabelsky teaches using an algorithm to avoid flooding the network and the monitor with alarm messages and network performance parameters are obtained from the RTCP processing instead of the phase 1 and phase 2 processing which means it is demoting to and from the root cause because the root cause/factor is from the raw data and therefore the network parameters are coming from RTCP processing instead of phase 2 processing.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A). "Method for setting and displaying performance thresholds using platform independent program" by Hoyer et al. U.S. Patent # 6,339,750.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dhairya A. Patel whose telephone number is 571-272-5809. The examiner can normally be reached on Monday-Friday 7:00AM-4: 30PM, first Fridays OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DAP

SALEH NAJJAR
SUPERVISORY PATENT EXAMINER